

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Richard Frederick McNichol
Appl. No.	:	10/765,979
Filed	:	January 29, 2004
For	:	HYDRAULIC GRAVITY RAM PUMP
Examiner	:	Philip Earl Stimpert
Group Art Unit	:	3709

DECLARATION OF RICHARD FREDERICK MCNICHOL

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Richard Frederick McNichol, declare as follows:

1. I am a citizen of Canada, residing at 5884 181 A Street, Surrey, British Columbia, Canada, V3S 4T2, and believe that I am the original and first inventor of the subject matter claimed and for which a patent is sought on the invention entitled "HYDRAULIC GRAVITY RAM PUMP," the specification of which was filed on January 29, 2004 as Application Serial No. 10/765,979.

2. I have invented the hydraulic gravity ram pumps described and claimed in the above-referenced application that are useful for extracting water and/or other liquids long distances from below the surface of the earth and/or below the ocean. I have made prototype pumps of the types described and claimed in the present application. Some of these prototype pumps have calculated pumping efficiencies dramatically and unexpectedly greater than the efficiencies of any comparable pumps currently used in the industry. For example, some of the most commonly used pumps in today's commercial market are centrifugal pumps with efficiencies of approximately 30%. Specifically, the commonly used Grundfos SQ series pumps (Grundfos Pumps Corp. U.S.A., Olathe, KS), which are comparable in size of prototypes of my invention, exhibit maximum efficiencies of about 30%. In contrast, I have built a prototype 3.5

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inch hydraulic gravity ram pump according to the present application that has a calculated efficiency in excess of 96%. Although not all of the prototype hydraulic gravity ram pumps tested have measured efficiencies greater than 90%, most are at least twice as efficient as conventional pumps (e.g., >80% efficiency). My prototypes are even more efficient than pumps using an electric motor alone.

3. My pumps are well-suited for use in the over 400,000 stripper oil wells in the United States, which average 2.2 BPD (barrels per day) of oil and 18 BPD of water produced. Thus, average production is approximately 20 BPD. Currently used small pumps employ 10 HP or larger pump jacks. Comparable prototype pumps according to the present application perform the same function at less than 1 HP. Thus, the prototype pumps of the present application exhibit surprisingly good energy efficiencies (as much as an order of magnitude better) when compared with the efficiencies of pumps currently in use in the market.

4. The pumps of my invention have achieved calculated efficiencies higher than anyone in the industry thought possible. When technical experts at competitor companies and others of ordinary skill in the art were presented with the data on my hydraulic gravity ram pumps, they were surprised and initially did not believe the spectacular results. Industry experts found the measured results for our prototype hydraulic gravity ram pumps to be nothing short of amazing when compared with results for pumps commonly used in industry (e.g., Grundfos SQ series).

5. I have read the Office Action dated May 31, 2007 and understand that Claims 1-9 have been rejected under 35 U.S.C. §103(a) as obvious over a combination of references, the two primary references being U.S. Pat. No. 6,193,476 to Sweeney and U.S. Pat. No. 3,148,629 to Sutliff. I am familiar with these references and I strongly disagree with the conclusion of obviousness.

6. During my extensive work history in the industry I worked with Gerald Sweeney, the inventor of the above-referenced Sweeney patent, in numerous mine dewatering operations and business ventures. It was during a particular project approximately twenty years ago that we discussed some of the initial ideas that Sweeney later developed and filed in his patent

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application. Over the years we held numerous discussions about Sweeney's development of the pump disclosed in the patent. Sweeney built a prototype of his pump that was not able to produce efficiencies on par with those used in industry or mentioned above. I witnessed some testing of Sweeney's prototype. Sweeney passed away in 2002, leaving ownership of the above-referenced issued patent to his wife. I recently acquired title to the Sweeney patent as evidenced by the assignment located at Reel 015017 and Frame 7899 of the U.S. Patent and Trademark Office.

7. I have also reviewed the disclosure of the Sweeney patent. The Sweeney patent teaches an apparatus for pumping water or other liquids. The Sweeney patent does not, however, teach how to build pumps like those of my invention. Further, modeled pumps of the designs disclosed in the Sweeney patent do not achieve the efficiencies of the pumps of my invention.

8. I have likewise reviewed the disclosure of the Sutliff patent. The Sutliff patent is directed to an apparatus used to return the plunger to the bottom of the stroke in a mechanically operated pump. Sutliff appears to teach the use of a pump jack (beam pump) and states that weights and springs are used to force the plunger back down after it is raised. The apparatus in the Sutliff patent is also used to attempt to increase the speed of the down-stroke in very viscous liquids. Use of this apparatus in a pump such as Sweeney's would not yield a pump with efficiencies similar to those of the pump of my invention.


9. Neither Sweeney nor Sutliff teach hydraulic gravity ram pumps like those of my invention. Neither Sweeney nor Sutliff teach a pump that can achieve efficiencies similar to the measured efficiencies of my prototype. The efficiencies of my prototype pump are far superior to those that would have been expected by the combination of Sweeney and Sutliff. Thus, the combination of the teachings of Sweeney and Sutliff do not render obvious my pumps as claimed in the pending application.

10. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the

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United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: Oct 31, 2007


Richard Frederick McNichol

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